

CLAIMS

1. A method for producing methionine comprising the following steps: (1) a first step of converting raw material capable of producing methionine through hydrolysis into a form of methionine-containing aqueous ammonia solution through hydrolysis in an aqueous ammonia solution with a biocatalyst having hydrolyzing activity, (2) a second step of separating the biocatalyst from the methionine-containing aqueous ammonia solution obtained in the first step, and (3) a third step of distilling ammonia out of the methionine-containing aqueous ammonia solution separated in the second step to deposit and separate crystals of methionine.

2. The method for producing methionine according to claim 1, wherein 2-amino-4-methylthiobutyronitrile as raw material is hydrolyzed in an aqueous ammonia solution with a biocatalyst having nitrile-hydrolyzing activity.

3. The method for producing methionine according to claim 1, wherein 2-amino-4-methylthiobutanamide as raw material is hydrolyzed in an aqueous ammonia solution with a biocatalyst having amide-hydrolyzing activity.

4. The method for producing methionine according to any one of claims 1 to 3, wherein an aqueous solution containing 1.5 to 10 fold equivalent amount of ammonia corresponding to that of methionine in the methionine-containing aqueous ammonia solution obtained in the first step, is used as aqueous ammonia solution.

5. The method for producing methionine according to any one of claims 1 to 4, wherein the concentration of methionine in the methionine-containing aqueous ammonia solution obtained in the first step is 5-30 wt%.

6. The method for producing methionine according to any one of claims 1 to 5, wherein the biocatalyst is reused.

7. The method for producing methionine according to any one of claims 1 to 6, wherein an immobilized bacterium is used as the biocatalyst.

8. The method for producing methionine according to any one of claims 1 to 7, wherein the distilled ammonia and the mother liquor from which crystals of methionine are separated and recovered are reused for hydrolysis reaction.

9. The method for producing methionine according to any one of claims 1 to 8, wherein the first step is performed under pressurization.